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ABSTRACT

German (n=610) and Russian (n=610) adolescents in 3 age groups, 12, 15, and 18 years, were given a questionnaire assessing their feelings towards environmental destruction, their readiness for pro-environmental action, and their ethical attitude toward nature. In both nationalities anxiety, sadness, and anger about environmental destruction were high, but hopelessness was rejected. German adolescents expressed more readiness for pro-environmental action and more consideration in human relations with living things than Russians. While German adolescents were willing to perform small-scale pro-environmental actions, with age they became increasingly reluctant to accept greater commitments for ecology. Females of both nationalities agreed more strongly to emotions and actions than males, particularly males aged 15 or above. Results are interpreted in terms of differences in environmental values and education in the two countries and in terms of females' higher prosocial attitudes. (Author)

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GERMAN AND RUSSIAN ADOLESCENTS' ENVIRONMENTAL AWARENESS

Poster presentation at the 1993 Biennial Meeting of the Society for Research in Child Development, New Orleans, Louisiana, U.S.A., March 25 -28, 1993

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ABSTRACT

610 German and 610 Russian adolescents in 3 age groups, 12, 15, and 18 years, were given a questionnaire assessing their feelings towards environmental destruction, their readiness for pro-environmental action, and their ethical attitude to nature. In both nationalities anxiety, sadness, and anger about environmental destruction were high, but hopelessness was rejected. German adolescents expressed more readiness for pro-environmental action and more consideration in human relations with living things than Russians. While German adolescents were willing to perform small-scale pro-environmental actions, with age they became increasingly reluctant to accept greater commitments for ecology. Females of both nationalities agreed more strongly to emotions and actions than males, particularly from age 15. Results are interpreted in terms of differences in environmental values and education in the two countries and in terms of females' higher prosocial attitudes.

AIMS

This research aimed at comparing German and Russian adolescents' environmental feelings and their readiness for pro-environmental action. Following Graumann and Kruse (1990) we view environmental awareness as a social construction , i.e. we assume that people in different societies conceptualize environmental risks differently. To our knowledge, this is the first study on Russian adolescents' environmental awareness.

Whereas most research with adolescents has looked at environmental knowledge (for a review see Blum, 1987), this research focusses on emotional and actional aspects of environmental awareness, as well as adolescents' relation to nature. Rather than working with the global construct of "emotional concern" we wanted to differentiate between different qualities of emotions about environmental destruction. Relation to nature was operationalized as enjoyment of nature and consideration in human relations to nature. This dimension has not been included in previous research.

Assumptions and research questions:

1) We challenged the view of a general hopelessness and pessimism with respect to environmental questions (Petri et al, 1986).

2) We assumed that there would be differences in strength of environmental feelings and readiness for pro-environmental action in dependence on gender, with females showing higher levels.

3) Are there differences in strength of attitude depending on:
a) type of emotion and type of environmental action,
b) specific content of an emotion or action within a scale?.

4) With respect to cross-national differences we predicted that Russians would have less environmental concern than Germans, particularly with respect to pro-environmental action, but that they would have stronger enjoyment of nature.

METHOD

Participants: 1220 children and adolescents
610 Germans and 610 Russians
316 females and 296 males per nationality
in three age groups:

	12 years		15 years		18 years	
	F	M	F	M	F	M
German	100	106	107	92	109	96
Russian	100	106	107	92	109	96

German adolescents came from 14 State schools and were resident in Oldenburg, Northwest Germany. Russian adolescents came from two State schools, and the oldest group were first year university students. All were resident in Akademgorodok near Novosibirsk, Western Siberia.

Task and scoring system

In both countries a questionnaire study was carried out. Within three thematic areas there were the following scales (number of items given in brackets, examples of items, see Appendix):

a) Emotions about environmental destruction:
1) anxiety about future destruction (6 items)
2) sadness about living things harmed by pollution (6 items)
3) anger at those seen to be responsible (6 items)
4) hopelessness about the state of the environment (6 items)
5) indifference about environmental problems (6 items)

b) readiness for pro-environmental action:
1) personal action (11 items for Germans, 8 items for Russians)
2) political action (8 items)

c) relation to nature:
1) enjoyment of nature (12 items)
2) consideration for nature (14 items).

Statements were mixed up in the questionnaire in two different random orders. Agreement/disagreement had to be given to each statement on a 6-point scale from "strongly agree" (= 6) to "strongly disagree" (= 1). For each subject an average score was computed for each scale.

RESULTS

Effects of nationality, age, and gender. - For each scale effects of nationality, age, and gender were tested by three-way ANOVA's, nationality (2 levels) x age (3 levels) x gender (2 levels). There were significant main effects for nationality for sadness, anger, hopelessness, indifference, personal action, enjoyment of nature, and consideration for nature, $F's(1,1208) > 5.02$, $p < .02$, but not for anxiety and political action. Main effects for gender were significant for all scales except hopelessness, $F's(1,1208) > 26.59$, $p < .001$. Main effects of age were significant for all scales except anxiety and anger, $F's(2,1208) > 5.11$, $p < .01$. The nationality x age interaction was significant for anxiety, sadness, anger, hopelessness, personal and poltical action, and enjoyment of nature, $F's(1,1208) > 3.12$, $p < .04$. The age x gender interaction was significant for the same scales plus indifference and consideration for nature, $F's(2,1208) > 3.82$, $p < .02$. Follow-up tests focussed on differences between individual cell means. Figures 1 - 9 show the mean scores for the emotion, action, and relation to nature scales per nationality, age group, and gender.

There was high agreement to anxiety, sadness, and anger.

ANXIETY (see Fig. 1)

Females of both nationalities were more anxious than males except for 12-year-old Russians. Russian females' anxiety scores increased at age 15. 12-year-old German females had higher anxiety scores than their Russian age-mates ($p < .05$).

SADNESS (see Fig. 2)

At all ages German females agreed to sadness more strongly than Russian females, but for males this was only true for 12-year-olds. German males' scores decreased at age 15, and at ages 15 and 18 German females had higher sadness scores than German males. Russian females had higher sadness scores than Russian males at all age levels ($p < .05$).

ANGER (see Fig. 3)

Germans agreed to anger more strongly than Russians. German males' scores decreased at age 15. At ages 15 and 18 females of both nationalities had higher anger scores than males ($p < .05$).

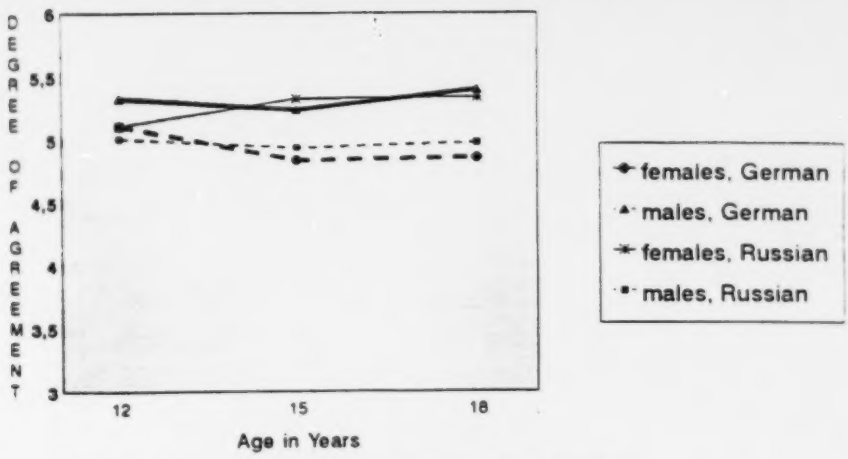

Fig.1.- Mean ratings of agreement to anxiety per nationality, age group, and gender.

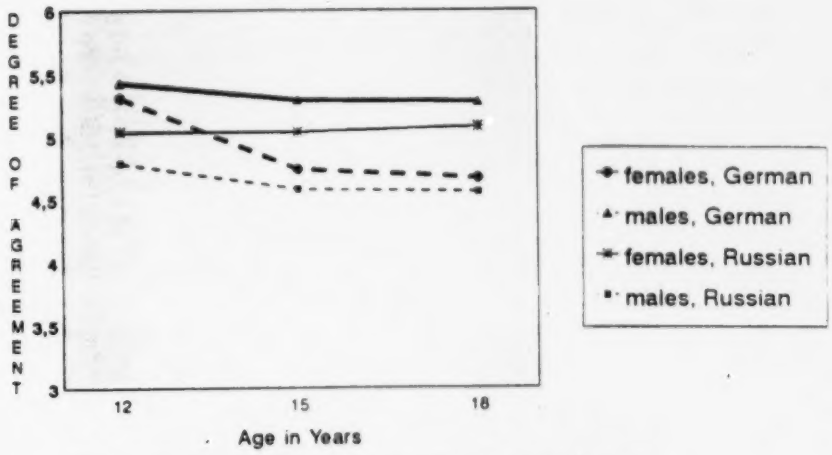

Fig.2.- Mean ratings of agreement to sadness per nationality, age group, and gender.

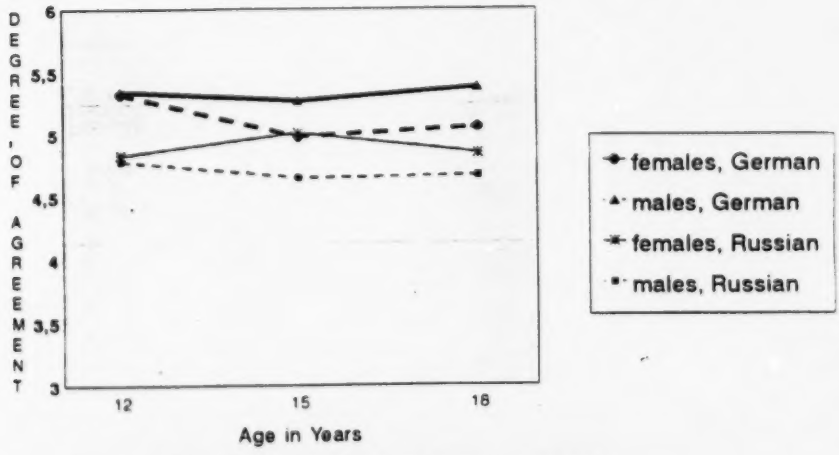

Fig.3.- Mean ratings of agreement to anger per nationality, age group, and gender.

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Hopelessness and indifference were rejected.

HOPELESSNESS (see Fig. 4)

At age 12, Russians of both sexes had higher hopelessness scores than Germans of both sexes. For Germans hopelessness scores increased at age 15. At age 12 Russian males were more hopeless than Russian females ($p < .05$).

INDIFFERENCE (see Fig. 5)

Germans were less indifferent about environmental destruction than Russians. Indifference increased for males of both nationalities at age 15. 15-and 18-year-old females of both nationalities were less indifferent than males ($p < .05$).

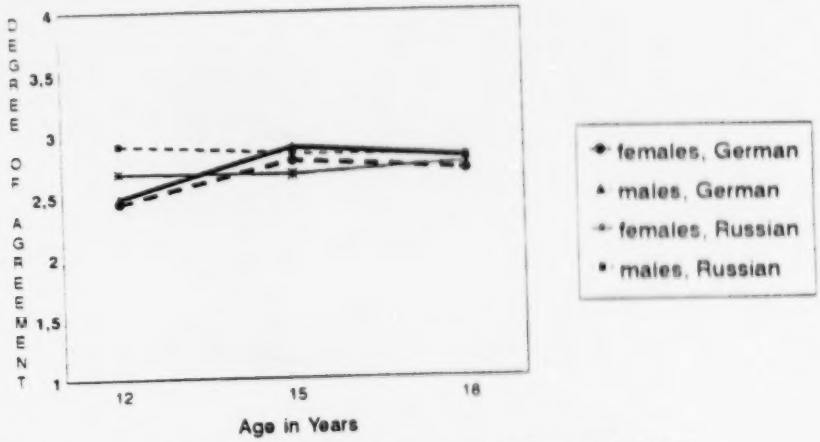

Fig.4.- Mean ratings of agreement to hopelessness per nationality, age group, and gender.

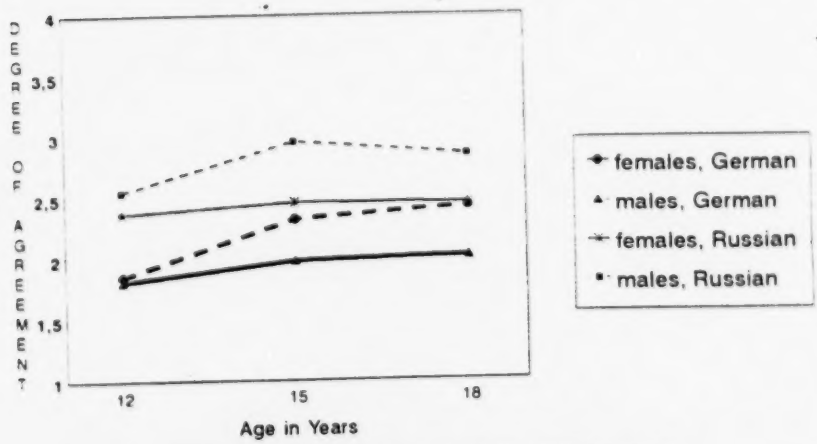

Fig.5.- Mean ratings of agreement to indifference per nationality, age group, and gender.

Overall, there was moderate agreement to both types of action.

PERSONAL ACTION (see Fig. 6)

Germans agreed more strongly to personal action than Russians. German males' readiness for personal action decreased at age 15. Russian males' scores approached rejection level. Overall, females of both nationalities had higher scores than males ($p < .05$).

POLITICAL ACTION (see Fig. 7)

Whereas Russian 12-year-olds of both sexes had lower scores than Germans, this was the reverse at age 18. Scores decreased for German females at every increasing age level, and for German and Russian males at age 15. At age levels 15 and 18 females had higher scores males ($p < .05$).

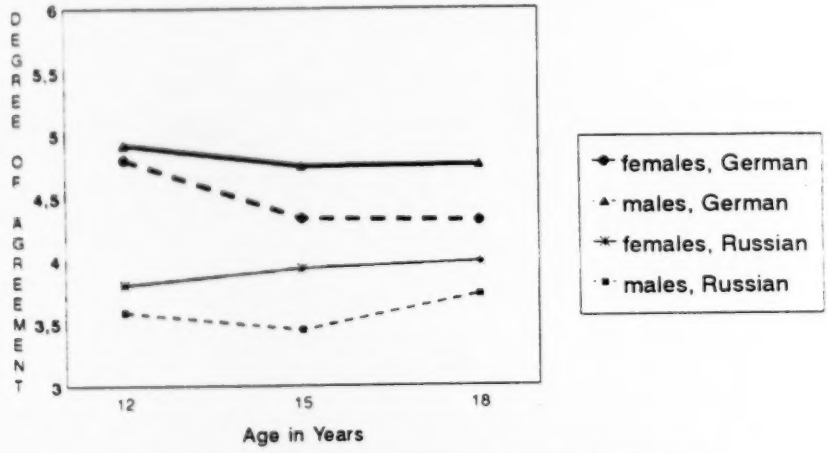

Fig.6.- Mean ratings of agreement to readiness for personal action per nationality, age group, and gender.

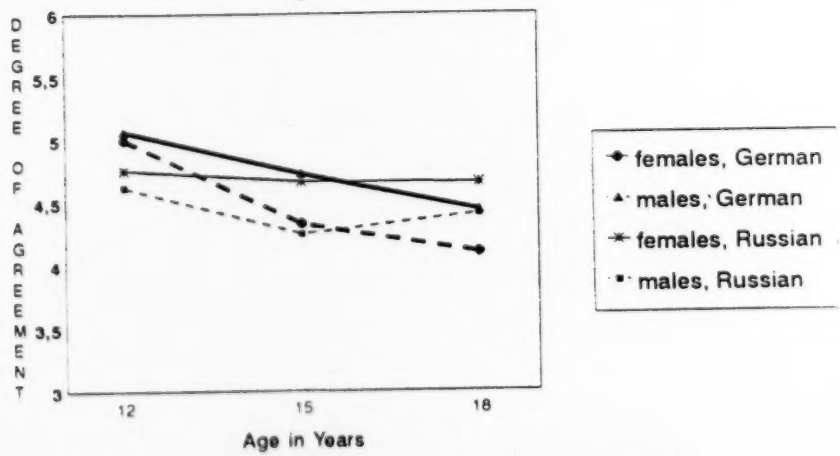

Fig.7.- Mean ratings of agreement to readiness for political action per nationality, age group, and gender.

There was fairly high agreement to enjoyment of nature and high to moderate agreement to consideration for nature.

ENJOYMENT OF NATURE (see Fig.8)

Whereas at ages 15 and 18 Russians had higher scores than Germans this was the other way round at age 12. Females of both nationalities always had higher scores than males. For Germans of both sexes scores decreased between age 12 and 15, but for Russian females scores increased at every age level ($p < .05$).

CONSIDERATION FOR NATURE (see Fig. 9)

Germans had more consideration for nature than Russians. For males of both nationalities and for German females scores decreased between 12 and 15 years. Females of both nationalities had more consideration for nature than males ($p < .05$).

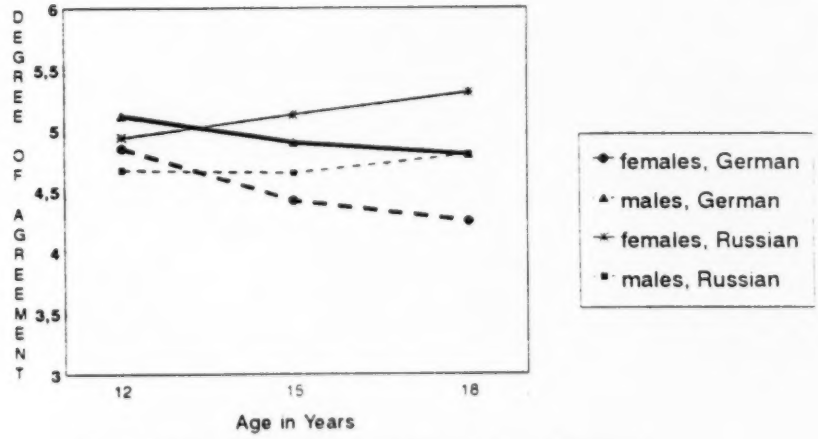

Fig.8.- Mean ratings of agreement to enjoyment of nature per nationality, age group, and gender.

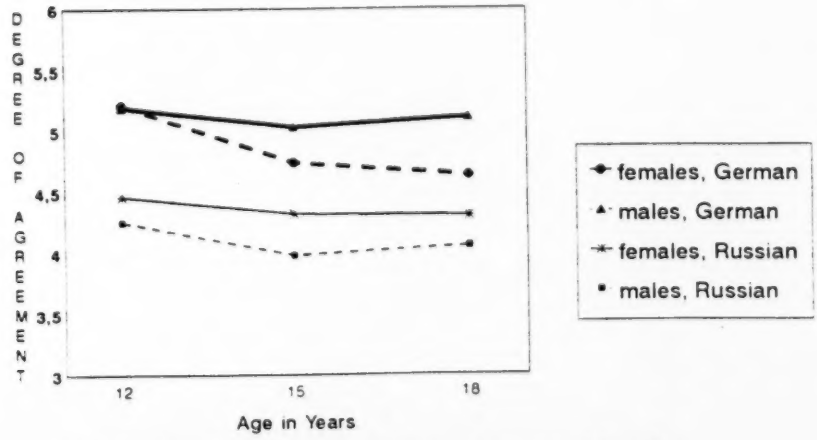

Fig.9.- Mean ratings of agreement to consideration for nature per nationality, age group, and gender.

Comparison of scales. - Degrees of agreement to sadness, anger, and anxiety did not differ for German females except for 18-year-olds who agreed to anxiety more strongly than to sadness (see Table 1). German males gave strongest agreement to anger, and this became more pronounced with age. Russians of all age groups agreed to anxiety most strongly (see Table 1), whereas anger was agreed to least strongly, especially by females. Whereas Germans always rejected indifference more strongly than hopelessness, for Russians this was only true of females and 12-year-old males.

Russians always agreed to political action more strongly than to personal action. For Germans this was true of 12-olds, but 18-year-olds agreed more strongly to personal action. Whereas Russians agreed to enjoyment of nature more strongly than to consideration for nature, this was the reverse for Germans.

Adolescents of both nationalities agreed to emotions more strongly than to actions.

TABLE 1

RANK ORDER OF GROUPS OF SCALES PER GENDER, AGE GROUP AND NATIONALITY

German			Russian		
gender	age	scale	gender	age	scale
		1) emotions agreed to:			
F	12,15	sadness/anger/anxiety	F	12	anxiety/sadness > anger
F	18	anxiety*/anger/sadness*	F	15	anxiety > sadness/anger
M	12	anger/ sadness > anxiety	F	18	anxiety > sadness > anger
M	15	anger*/anxiety/sadness*	M	12	anxiety > sadness/anger
M	18	anger > anxiety > sadness	M	15,18	anxiety > anger/sadness
		2) emotions rejected:			
F,M	12,15,18	hopelessness > indifference	F	12,15,18	hopelessness > indifference
			M	12	hopelessness > indifference
			M	15,18	hopelessness/indifference
		3) readiness for actions:			
F,M	12	political > personal	F,M	12,15,18	political > personal
F,M	15	personal/political			
F,M	18	personal > political			
		4) relation to nature:			
F	12	consideration/enjoyment	F,M	12,15,18	enjoyment > consideration
M	12	consideration > enjoyment			
F,M	15, 18	consideration > enjoyment			

NOTE. - Per nationality from left to right scales are in descending rank order. ">" indicates significant differences for adjacent and "*" for non-adjacent scales ($p < .05$). "/" separates adjacent scales which do not differ significantly.

Subcategories within scales. - Within some scales subcategories grouping items according to content criteria were formed. Here, we will present the following:

Hopelessness subcategories:

1) Hopelessness about the effects of one's personal efforts for environmental protection

2) hopelessness about one's personal future in view of the state of the environment

3) hopelessness about the general ecological situation

Personal action subcategories:

1) Everyday actions involving no special effort

2) actions involving a greater sacrifice or commitment to environmental protection

Political action subcategories:

1) demand for government action

2) wanting to influence government policy

3) wanting to become a member of an environmental group.

For each subject average scores for each subcategory were computed. The average score was computed by averaging over the sums of respective subcategory scores.

SUBCATEGORIES OF HOPELESSNESS (see Fig. 10)

Russians were more hopeless about their own efforts for environmental protection than Germans, with scores at agreement level for males. Germans always rejected hopelessness about their personal efforts for environmental protection more strongly than the other hopelessness subcategories, but for Russians this was the other way round (Dunn's, <.05).

SUBCATEGORIES OF PERSONAL ACTION (see Fig. 11)

Germans agreed to everyday personal actions more strongly than Russians. At ages 12 and 15 this was also true for actions involving a greater sacrifice. Germans always agreed to everyday actions more strongly than to actions involving a greater sacrifice (Dunn's, $p < .05$). There was no difference between these categories in most Russian age and gender groups.

SUBCATEGORIES OF POLITICAL ACTION (see Fig. 11)

Adolescents of the two nationalities hardly differed in their agreement to demand for government pro-environmental action and, in fact, agreed more strongly to this than to any other subcategory (Dunn's, $p < .05$). German 12-and 15-year-olds of both sexes agreed more strongly to wanting to influence government policy than Russians of the same age. For Germans scores for wanting to join an environmental group decreased rapidly over age, and well below the level of Russians at age 18.

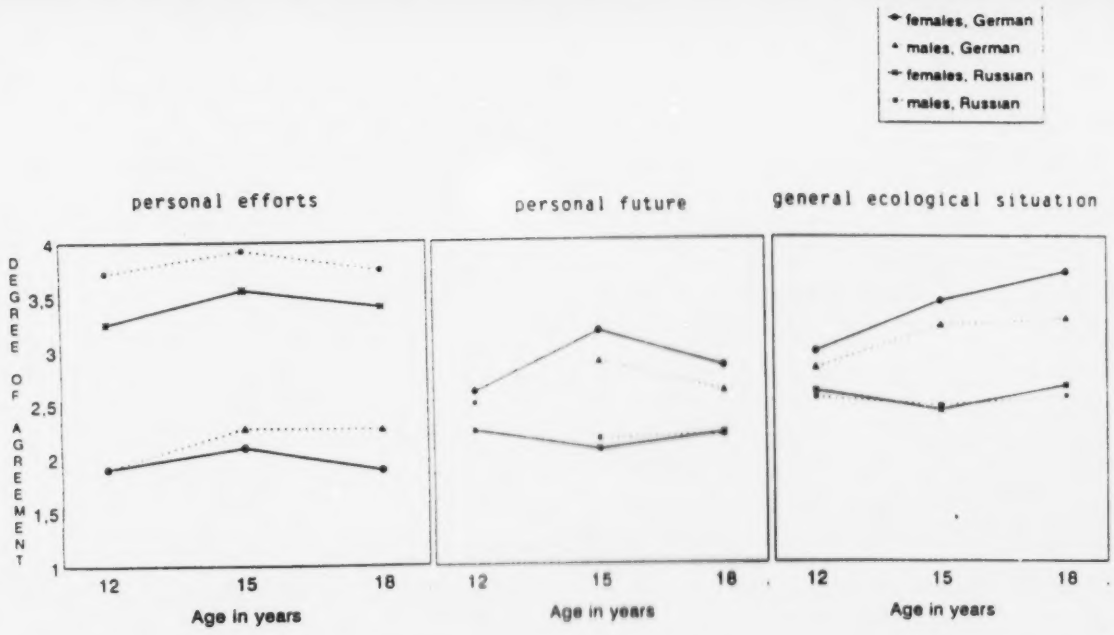

Fig. 10. - Mean ratings of agreement to subcategories of hopelessness per nationality, age, and gender

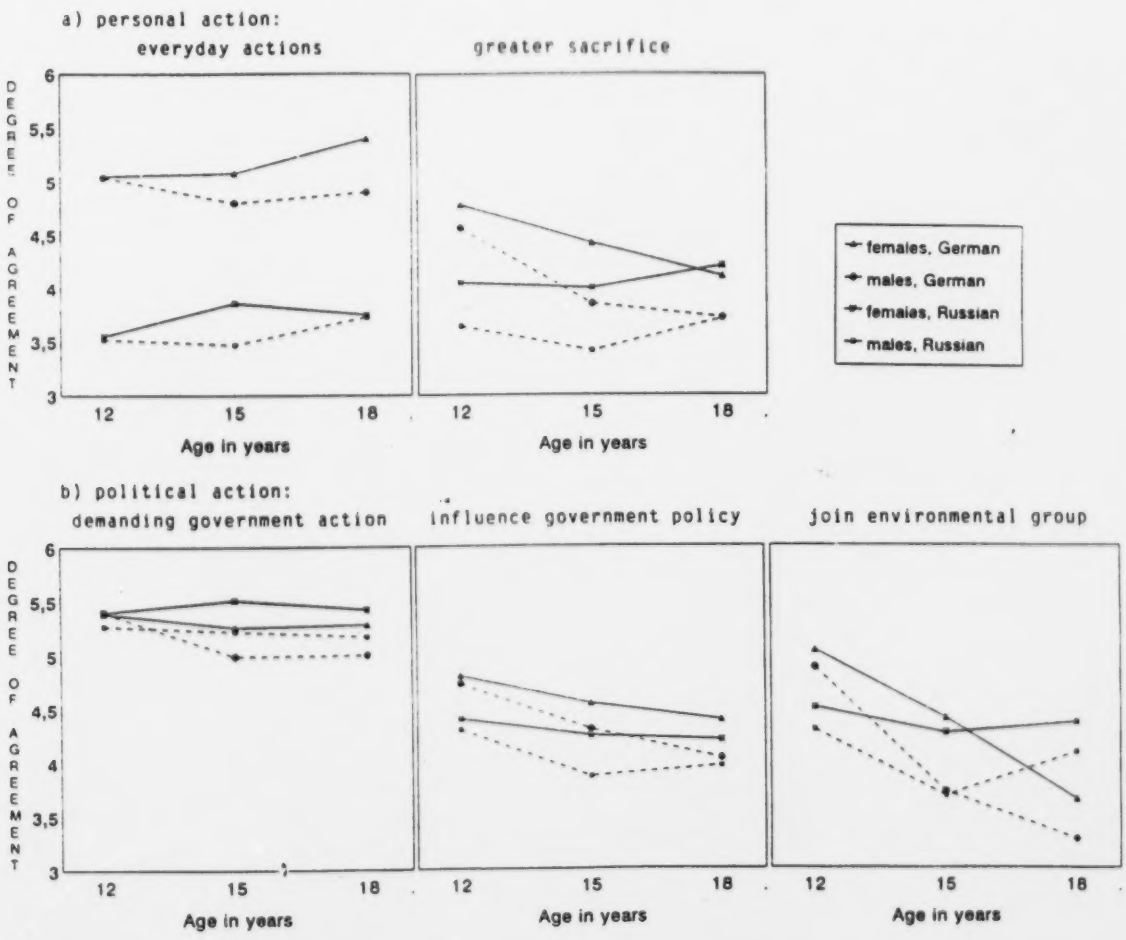

Fig. 11. - Mean ratings of agreement to subcategories of types of action per nationality, age, and gender

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SUMMARY AND CONCLUSIONS

In this study adolescents of both nationalities were found to have a highly emotional attitude towards environmental destruction. Environmental feelings also differed in dependence on gender, age, and nationality. 15-and 18-year-old female adolescents of both nationalities expressed more anxiety, sadness, and anger about environmental destruction than their male agemates, while, at the same time, being less indifferent about environmental problems. Sex differences in environmental feelings were less pronounced for 12-year-olds. Germans were more angry, sad, and less indifferent about environmental destruction than Russians. From age 15 male German adolescents expressed less sadness and anger and male German and Russian adolescents rejected indifference less, whereas females' agreement to these emotions remained almost unchanged over age.

In both nationalities agreement to readiness for pro-environmental action was always lower than to environmental feelings. Germans were much more ready to take personal pro-environmental action than Russians. 15-and 18-year-old female adolescents of both nationalities were more ready for both types of action than their male agemates. Readiness for pro-environmental action decreased from age 15, especially for males and for Germans. Russian males nearly rejected pro-environmental action.

While consideration for nature was high for Germans, it was only moderate for Russians, who, in turn, expressed more enjoyment of nature than Germans. From age 15 agreement to a considerate treatment of nature was less for Germans of both sexes and for Russian males. For Russian females enjoyment of nature increased with age. Females of both nationalities expressed more consideration for nature and more enjoyment of nature than males.

The effect of gender was most pronounced, it was independent of culture and always in one direction: 15- and 18-year-old female adolescents had stronger environmental feelings and action tendencies. Sex differences in environmental feelings and behavioral tendencies are consistent with sex differences in prosocial attitudes where girls and women have often been found to have higher levels of prosocial feelings and behavior. If one extends the notion of "prosocial" to include a caring attitude for non-human living beings, environmental feelings and action

tendencies may be viewed as a case of prosocial attitudes (see also Szagun & Mesenholl, in print).

We attribute Russians' lower environmental concern to the fact that environmental problems are not as prevailing a topic in Russia as in Germany. The cause for Russians' higher enjoyment of nature may be that in Russia nature is one of few places for relaxation, especially in a small Siberian community. Russians' lower consideration for nature may, in part, be the consequence of living in a big country where nature is plentiful and much wilder than in Germany. Germans' more caring attitude may stem from more knowledge about nature's vulnerability, as a result of environmental education. However, our results throw doubts on the view that great enjoyment of nature goes with high levels of consideration for nature.

The effect of age was much stronger for the German sample and for males. 12-year-old boys had stronger environmental feelings and 12-year-olds of both sexes stronger pro-environmental action tendencies. We interpret this result in terms of sex differences in prosocial environmental attitudes becoming more pronounced in older adolescents and in terms of 12-year-olds' less realistic appreciation both of what they can and are prepared to do in order to act in an environmentally responsible manner. This would apply to a society like Germany with a strong positive value on environmental concern where children may get very enthusiastic about pro-environmental actions

The rejection of indifference and hopelessness about environmental problems demonstrates clearly that high levels of anxiety about future environmental destruction do not go with high levels of hopelessness and indifference. In the light of our results conclusions about a general pessimism in adolescents with respect to their future in a polluted environment are unwarranted.

Subcategory analysis suggests that Germans accept a personal responsibility for the environment in terms of small-scale actions of everyday life and that they believe in the effects of such actions. Russians, on the other hand, are hardly prepared to perform such small-scale actions and they are least hopeful about the effects of such actions. However, with age Germans get less prepared to accept considerable renunciation or commitment for ecology. Adolescents of both nationalities consider the big efforts for environmental protection a societal task to be regulated by government action.

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APPENDIX. - EXAMPLES OF QUESTIONNAIRE STATEMENTS

Environmental feelings

Anxiety

+ I am frightened that in the future there will be more and more pollution and ecological catastrophes.
- I do not fear the effects of pollution for myself.

Sadness

- Thinking about diseased forests does not particularly affect me.
+ I am often sad to think of the misery of the many animals diseased by pollution.

Anger

- It does not particularly irritate me if industry pollutes the environment.
+ It makes me angry if politicians are slow in getting conservation measures put into law.

Hopelessness

+ When I think about how the environment is breaking up, I see no point in learning for the future in school. (personal future)*
- I believe that human beings will finally find ways of saving the environment. (general ecological state)
+ Whatever I can do for the environment, nothing will be changed. (personal effort)

Indifference

- I am preoccupied with thoughts of what is being done to the environment.
+ You hear so much about environmental pollution that I don't listen any more.

Readiness for environmental action

Personal action

- I cannot be bothered to return bottles or separate out different kinds of waste material. (everday action)
+ I would be prepared to pay more for ecologically friendly products - e.g. adhesives, cosmetics, exercise books from recycled paper. (not for Russians) (greater sacrifice/commitment)
+ I would like to have a job where I could work in association with conservation. (greater sacrifice/commitment)

Political action

- I think it is an overreaction to attend a demonstration against destruction of the environment. (influence government policy)
+ The government should speed up anti-pollution legislation and link it to finance, for example by an environment tax. (demand for government action)
- I have no wish to be part of any environmental organization. (join environmental group)

Enjoyment of nature

+ I specially love the soft rustling of leaves when the wind blows through the treetops.
- Sometimes I find the countryside boring.
+ I love to listen to the sound of waves upon the seashore.

Consideration in human relations with nature

- In order to feed human beings forests must be cleared, so that, for example, grain can be grown.
- Fur coats should not be bought because animals died to produce them.
+ Humans may keep animals only if they let them live naturally.
+ We should let trees stand where they grow, even if they grow near a road where they may be a potential problem.

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*For scales with subcategories the subcategory is given in brackets.